

CASE HP/5-21550/A/CONT

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

IN RE APPLICATION OF  
DIETMAR HÜGLIN ET AL  
APPLICATION NO: 10/016,903  
FILED: DECEMBER 14, 2001  
FOR: USE OF NANODISPERSIONS IN  
COSMETIC END FORMULATIONS

Group Art Unit: 1615  
Examiner: G. S. Kishore

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REQUEST FOR REHEARING UNDER  
37 CFR 1.197(b) OF APPEAL NO. 2004-1983

Sir:

In the matter of Appeal No. 2004-1983, the Board of Patent Appeals and Interferences affirmed the rejection of claims 32, 33 and 35-43 under 35 U.S.C. § 103(a) as unpatentable over EP-A 350 150. Appellants respectfully request rehearing of this decision.

The Board's adverse decision is based on an interpretation of page 4 of EP-A 349 150, which teaches mixing of a lipid and a water phase "in an emulsifier, such as a homomixer" (page 4, line 30), and

further teaches an improvement when using a "strong shearing force treatment", which is seen in a device providing "a stronger shearing force than a mixer (e.g. a homomixer...)" (see lines 37 and 38).

From the fact that EP '150 describes the possibility of applying a higher shearing force than a homomixer, and refers to this treatment as "a strong shearing force treatment", the Board concluded that mixing with a homomixer does not involve strong shearing forces and, ergo, is done in the absence of high shear or cavitation forces, thus conforming to the limits of step (B) of independent claim 32.

This conclusion not unreasonable; however it is **clearly erroneous**. With respect to a homomixer, EP '150 clearly talks about "stronger shearing force than a homomixer" (note the comparative term), which does not imply that a homomixer does not also apply a strong shearing force, or a high shear or cavitation force as excluded by the present claims language. On line 37 of page 4, EP '150 makes an effort to define the term "strong shearing force" in relation to the force applied by a homomixer. This only shows that the inventors of EP '150 have seen the need to define a specific range of shear force as "strong", obviously because this range, as explained in the document, may provide even better results. Naturally, this range, specifically defined for the needs of the subject matter of EP'150, is not necessarily identical with the range of shearing forces usually understood by one skilled in the art as "strong".

The Board members are respectfully directed to paragraph [0046] of U.S. Patent Publication No. US 2004/0266725 A1. Said paragraph reads:

[0046] In the case of using a stirrer having a relatively small shear force, such as the magnetic stirrer or the mechanical stirrer, as the stirring means, a viscosity of the composition to be obtained is reduced with the increase in the shear force (shear speed) as is reported in the aforementioned literature Journal of Biological Macromolecules, 26 (1999), p. 255-261, FIG. 8. In the case of applying a larger shear force by using stress applying means having a large shear force (shear speed) such as the homogenizer (for example, T. K. HOMO MIXER manufactured by Tokushu Kika Kogyo Co., Ltd.), it is preferred to shear the composition with a shear force belonging to a range of shear force which contributes to an increase in viscosity of the product as described in embodiments in detail later in this specification. By employing such method, it is possible to reduce the number or the size of gel particles, thereby enabling to achieve an excellent feel in instillation when the composition is used as an ingredient of eyedrops or, when the composition is used in combination with a function agent, enabling the function agent to exhibit its effect more efficiently.

Note that the T. K. HOMO MIXER is clearly identified as a "stress applying means having a large shear force", as opposed to "a stirrer having a relatively small shear force, such as the magnetic

stirrer or the mechanical stirrer". A simple magnetic stirrer is used in step (β) of the examples of the present invention.

Four different processes to prepare emulsions are taught in paragraphs [0119] through [1227] of U.S. Patent Publication No. US 2004/0266725 A1. Processes A through C use conventional low shear mixing devices, such as a magnetic stirrer or a mechanical stirrer, while Process D employs the homomixer described above. The subsequent examples demonstrate the superiority of the homomixer versus conventional low shear mixing devices.

As further evidence that a homomixer is not a conventional low shear mixing device, appellants append a copy of a web page describing a commercially available homomixer. It states, "Homomixers are high-speed, high shear batch mixers used for mixing, emulsifying and dispersing".

Appellants also append copies of opinion Declarations by both American and European experts in chemical mixing equipment, who have quite different training and backgrounds. Both declare that a homomixer is a high shear mixing device.

Appellants aver that a homomixer as used in EP-A-349150 is clearly understood by the those skilled in the art as a device to apply a high shear force to a mixture.

For those unfamiliar with chemical processing equipment, the following non-chemical example is offered merely by way of illustration, noting that a Waring Blender, which is commonly used to prepare "frozen" cocktail drinks, is a much less powerful mixing device than a homomixer.

If one mixed all the components of a daiquiri, including the requisite amount of ice cubes, in a Waring Blender, a "frozen daiquiri" would be obtained. But suppose the identical components were simply placed into a glass and stirred with a swizzle stick. Would one expect to obtain a "frozen daiquiri"? Of course not! It would be absolutely amazing to obtain a "frozen daiquiri" without using a high shear mixing device.

Yet what the present inventors have invented is no less than the equivalent of obtaining a "frozen daiquiri" by stirring with a swizzle stick! This must be regarded as surprising and unobvious over EP-A 350 150, which teaches that the final mixing step must be carried out either with a homomixer or

an even more powerful mixing device, such as a Manton Gaulin homogenizer, which develops substantially higher shear or cavitation forces.

Since mixing with a homomixer is necessarily carried out in the presence of high shear or cavitation forces, and is thus precluded by the limits of process step (B) in independent claim 32, appellants aver that the rejection of claims 32, 33 and 35-43 under 35 U.S.C. § 103(a) as unpatentable over EP-A 350 150 is based on a fatally flawed interpretation of the sole reference relied upon and should be overturned on rehearing.

Appellants note an additional issue raised by the Board. Remand to the examiner for further action with regard to this issue is deemed appropriate.

Respectfully submitted,



Kevin T. Mansfield  
Agent for Appellants  
Reg. No. 31,635

Ciba Specialty Chemicals Corporation  
Patent Department  
540 White Plains Road  
P.O. Box 2005  
Tarrytown, NY 10591-9005  
(914) 785-7127  
KTM\21550CRehear

Enclosures: Form PTO-1449, 1 reference, 2 Declarations

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